

1 "frangible connections" (28 of Fig. 5 in U.S. 3,007,620, column 4, lines 22  
2 to 34).

3  
4 CLAIMS

5 1. A punch-card device including a user-controlled punch, a die having  
6 a flat area adapted to support a machine-processable record card while said  
7 card is being punched, and a light source of at least three watts mounted  
8 below a plane of said flat area in a position to direct light through an  
9 aperture made in said card by said punch, and thence toward an eye of a user  
10 of said device.

11 2. A punch-card device according to claim 1 wherein said light source  
12 includes an electric light bulb and a mirror.

13 3. A punch-card device according to claim 1 wherein said light source  
14 includes two electric light bulbs.

15 4. A punch-card device according to claim 1 wherein said light source  
16 includes an eclectic light bulb, partially surrounded by a reflector.

17 5. A punch-card device according to claim 1 wherein said light source  
18 includes an electric light bulb having an overall length greater than three  
19 times said bulb's maximum diameter.

20 6. A punch-card device according to claim 1 wherein said light source  
21 is illuminated by an operation of a limit switch closed by the full insertion  
22 of said card into said device.

23 7. A punch-card device according to claim 1 wherein an upper surface of  
24 said die is made of a material that is pervious to light.

25 8. A punch-card device according to claim 1 wherein an upper surface of  
26 said die is supported on ribs made of a transparent material.

27 9. A punch-card device according to claim 1 wherein at least one  
28 transparent plane is interposed between said light source and chads punched  
29 out of said card.

1           10. A punch-card device according to claim 1 wherein light from said  
2 light source is made visible to the user of said device, to indicate to said  
3 user that the light source is energized.

4           11. A punch-card device according to claim 1 wherein an open space is  
5 provided below said die, said space having at least as great a width and  
6 length as said die, and a depth at least as great as the vertical height of  
7 said light source.

8           12. A punch-card device according to claim 1 wherein said punch is in  
9 the form of a stylus with (a) a handle and (b) a slender probe, made of a  
10 durable material and having a diameter smaller than the minimum width of  
11 preperforated areas to be punched out of said card, a free end of said  
12 slender probe being slightly rounded to prevent binding during a punching  
13 operation.

14           13. A punch-card device according to claim 1 wherein said light source  
15 includes one electric light bulb and one mirror spaced apart by more than the  
16 width of said die.

17           14. A punch-card device according to claim 1 wherein instructions to  
18 the user regarding a proper method for inserting said card and manipulating  
19 the punch are visible to said user during the punching operation.

20           15. A punch-card device according to claim 1 wherein said card has a  
21 plurality of preperforated areas.

22           16. A punch-card device according to claim 1 wherein said card has a  
23 plurality of preperforated areas arranged in a plurality of rows and a  
24 plurality of columns.

25           17. A punch-card device according to claim 1 wherein said card has a  
26 plurality of preperforated areas arranged in a plurality of rows and a  
27 plurality of columns, and said device has a plurality of leaves turnably  
28~ mounted on co-planar parallel axes spaced apart by multiples of the distance  
29 between adjacent columns of said preperforated areas.

1        18. A punch-card device according to claim 1 wherein said card has a  
2 plurality of preperforated areas arranged in a plurality of rows and a  
3 plurality of columns, and said device has a plurality of leaves turnably  
4 mounted on co-planar parallel axes spaced apart by multiples of the distance  
5 between adjacent columns of said preperforated areas, said leaves each having  
6 an edge adjacent to a different column of said preperforated areas and  
7 exhibiting a plurality of legible choices each aligned with a different one  
8 of said rows.

9        19. A punch-card device according to claim 1 wherein said card has a  
10 plurality of preperforated areas arranged in a plurality of rows and a  
11 plurality of columns, and said device has a plurality of leaves turnably  
12 mounted on co-planar parallel axes spaced apart by multiples of the distance  
13 between adjacent columns of said preperforated areas, said leaves each having  
14 an edge adjacent to a different column of said preperforated areas and  
15 exhibiting a plurality of legible choices each aligned with a different one  
16 of said rows, said device also having (a) an opaque outer template mounted  
17 immediately underneath the plane of said axes and having an aperture adjacent  
18 to each of said choices, and (b) a transparent inner template immediately  
19 underneath said outer template and having an aperture in register with each  
20 preperforated area of said card when said card has been inserted into said  
21 device sufficiently to bear against a flange fixed to the lower end of said  
22 inner template.

23       20. A punch-card device according to claim 1 wherein said card has a  
24 plurality of preperforated areas arranged in a plurality of rows and a  
25 plurality of columns, and said device has a plurality of leaves turnably  
26 mounted on co-planar parallel axes spaced apart by multiples of the distance  
27 between adjacent columns of said preperforated areas, said leaves each having  
28 an edge adjacent to a different column of said preperforated areas and  
29 exhibiting a plurality of legible choices each aligned with a different one

1 of said rows, said device also having (a) an opaque outer template mounted  
2 immediately underneath the plane of said axes and having an aperture adjacent  
3 to each of said choices, and (b) a transparent inner template immediately  
4 underneath said outer template and having an aperture in register with each  
5 preperforated area of said card when said card has been inserted into said  
6 device sufficiently to bear against a flange fixed to the lower end of said  
7 inner template, said card shifting said inner template to a position of  
8 register of the apertures in said inner and said outer templates against the  
9 urging of a light spring bearing against said flange.

10 21. A punch-card device according to claim 1 wherein an upper surface  
11 of said die is made of a resilient material and has slits adapted to permit  
12 said punch to detach preperforated areas from said card and force them into  
13 the open space beneath said die.

14 22. A punch-card device according to claim 1 wherein said punch is in  
15 the form of a stylus with (a) a handle and (b) a slender probe, made of a  
16 durable material and having a diameter smaller than the minimum width of  
17 preperforated areas to be punched out of said card, a free end of said probe  
18 being slightly rounded to prevent binding during a punching operation and  
19 having a tip including a short needle adapted to spear said preperforated  
20 areas of said card.

21 23. A punch-card device according to claim 1 wherein a rectangular  
22 open-top box is snapped onto the underside of said device beneath said die,  
23 adapted to catch all chads punched out of said card.

24~ 24. A punch-card device according to claim 1 wherein a small portion of  
25 the illumination from said light source is made visible to the user of said  
26 device, to signal that said device is ready for voting.